

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (canceled)

Claim 5 (currently amended): Thiophene oligomers [according to claim 4], characterized in that they have at least one functional group able to form a covalent bond with biological molecules and are excitable in the visible and ultraviolet light region without altering the biological activity of the biological molecules;

where the functional group is NCS.

Claim 6 (previously presented): Thiophene oligomers according to claim 5, where the functional group NCS is bound to the oligomer by means of an alkyl spacer comprising from 2 to 4 carbon atoms.

Claim 7 (previously presented): Thiophene oligomers according to claim 6, where the alkyl spacer is selected from the group consisting of $\text{CH}_2\text{CH}_2\text{-}$ and $(\text{CH}_3)_2\text{Si-CH}_2\text{-}$.

Claims 14-18 (canceled)

Claim 19 (previously presented): Thiophene oligomers excitable in the visible and ultraviolet light region comprising at least one functional NCS group able to form a covalent bond with organic molecules, biological molecules or both.

Claim 20 (previously presented): Thiophene oligomers according to claim 19, where the functional NCS group is bound to the oligomer by an alkyl spacer comprising from 2 to 4 carbon atoms.

Claim 21 (previously presented): Thiophene oligomers according to claim 20, where the alkyl spacer is selected from the group consisting of $\text{CH}_2\text{CH}_2\text{-}$ and $(\text{CH}_3)_2\text{Si-CH}_2\text{-}$.

Claim 22 (previously presented): A method of detecting molecules comprising:

- a) providing thiophene oligomers according to claim 19;
- b) covalently bonding the thiophene oligomers to the molecules; and

c) detecting fluorescence of the bound thiophene oligomers.

Claim 23 (previously presented): The method of claim 22, where the molecules are selected from the group consisting of proteins, polyclonal antibodies, fractions of polyclonal antibodies, monoclonal antibodies, fractions of monoclonal antibodies, nucleic acids, oligonucleotides, hormones, medicines, drugs, and non-proteic chemical neurotransmitters.

Claim 24 (previously presented): The method of claim 22, where detecting fluorescence comprises performing one or more than one procedure selected from the group consisting of spectrometry, spectrofluorimetry, flow and static cytometry, fluorescence microscopy and gel electrophoresis.

Claim 25 (currently amended): The method of claim [17] 22, where the thiophene oligomers provided comprise a plurality of thiophene oligomers with different emission frequencies, and where detecting fluorescence comprises simultaneously exciting the thiophene oligomers, through one or more than one emissive radiation source.

Claim 26 (previously presented): A conjugate comprising a thiophene oligomer according to claim 19 covalently bound to an organic molecule or to a biological molecule.